

Interventions Targeting Medication Adherence and Drug Use for HIV+ Criminal Justice Populations

Sandra A. Springer, M.D.

Frederick L. Altice, M.D.

Yale University School of Medicine

Section of Infectious Diseases

Yale AIDS Program



Why Focus on Correctional Settings?

- Success in any endeavor requires single-minded attention to detail and total concentration.
- You can get more with a kind word and a gun than you can get with just a kind word.
- Go where the money is... and go there often.

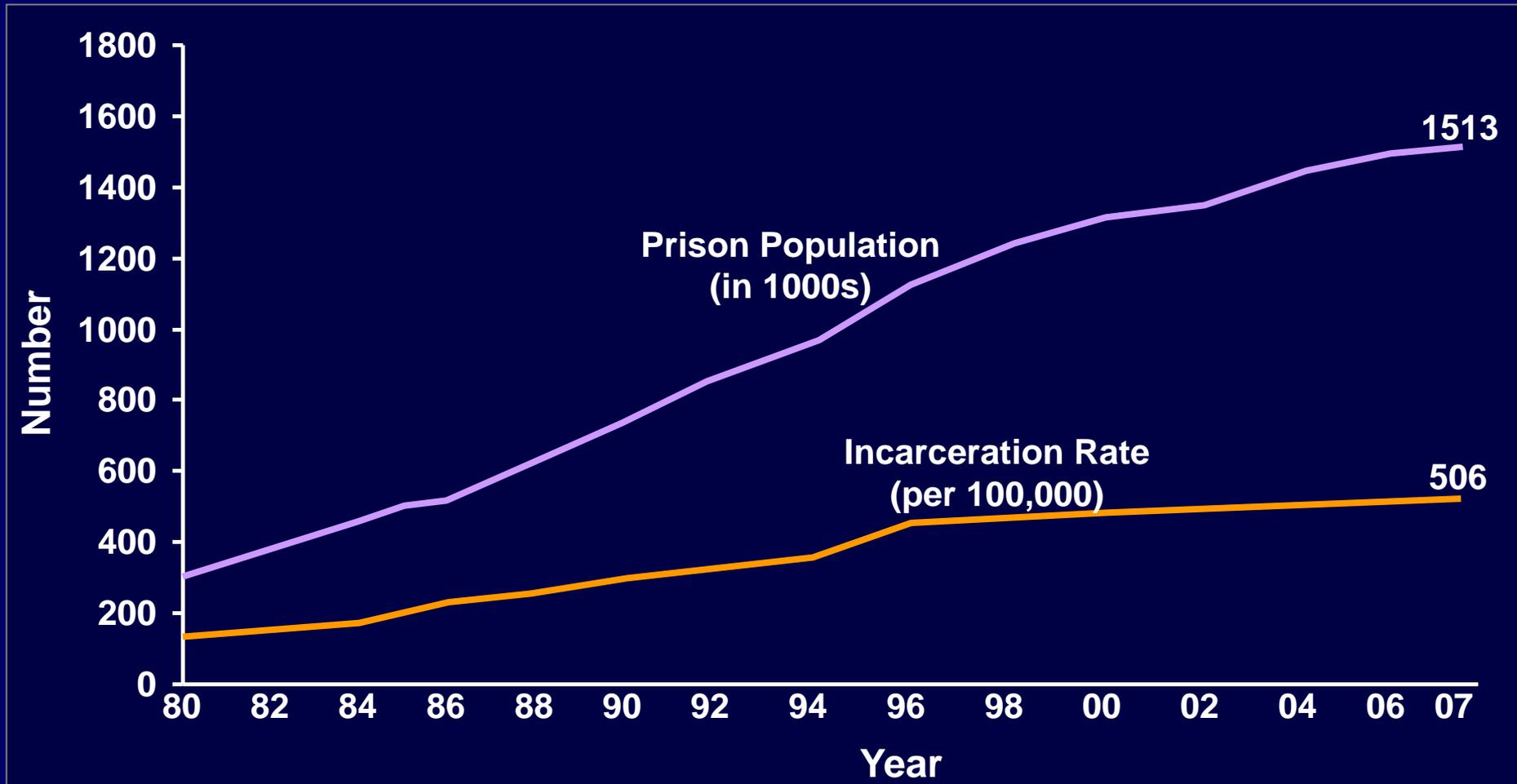


Willie F. Sutton

Where Do HIV+ Persons Interact with Criminal Justice System?



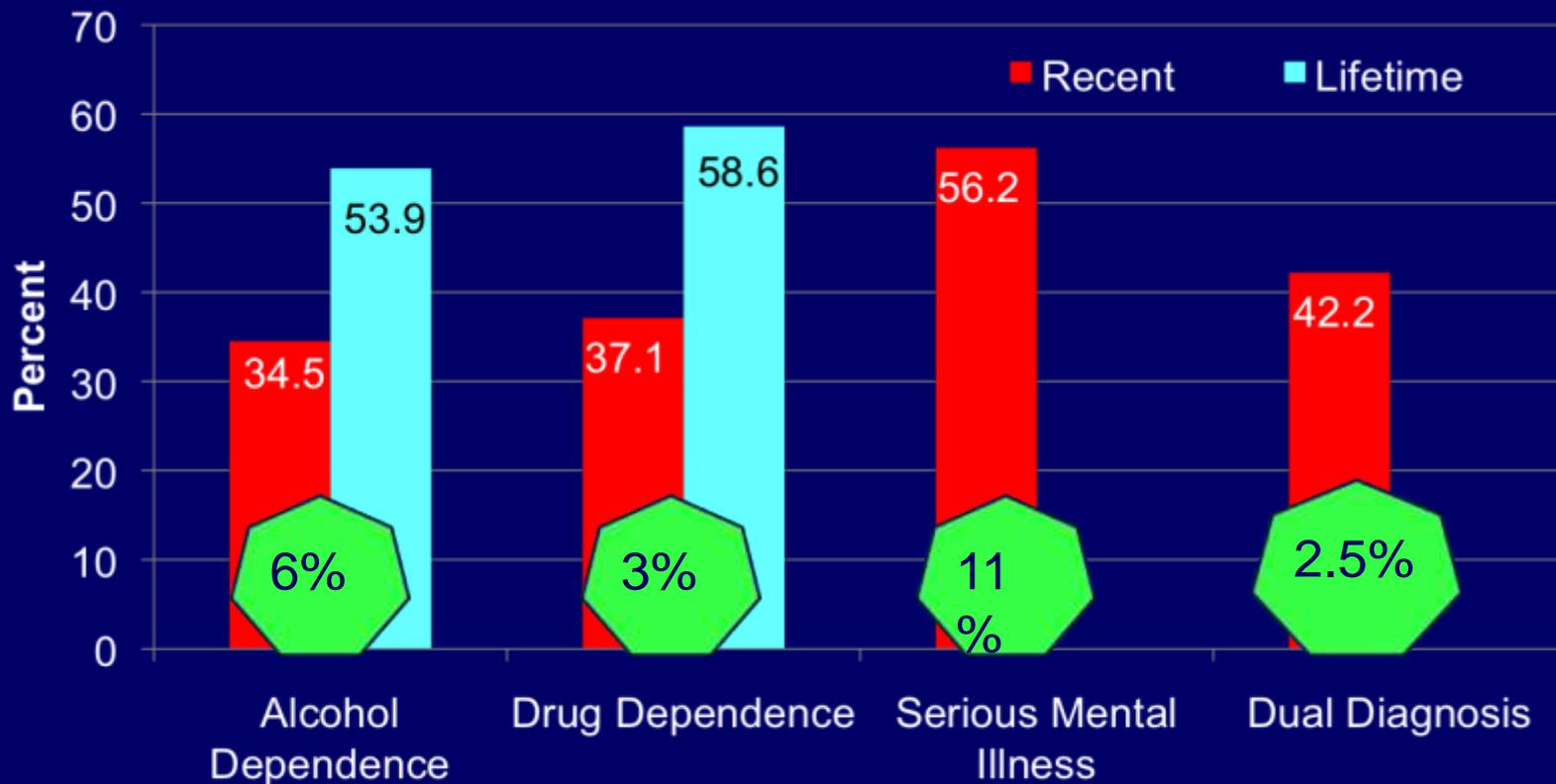
Prison Population and Incarceration Rate in the United States



Bureau of Justice Statistics.

Available at: <http://www.ojp.gov/bjs/glance.htm>.

Prevalence of DSM-IV Diagnoses Among U.S. Prisoners



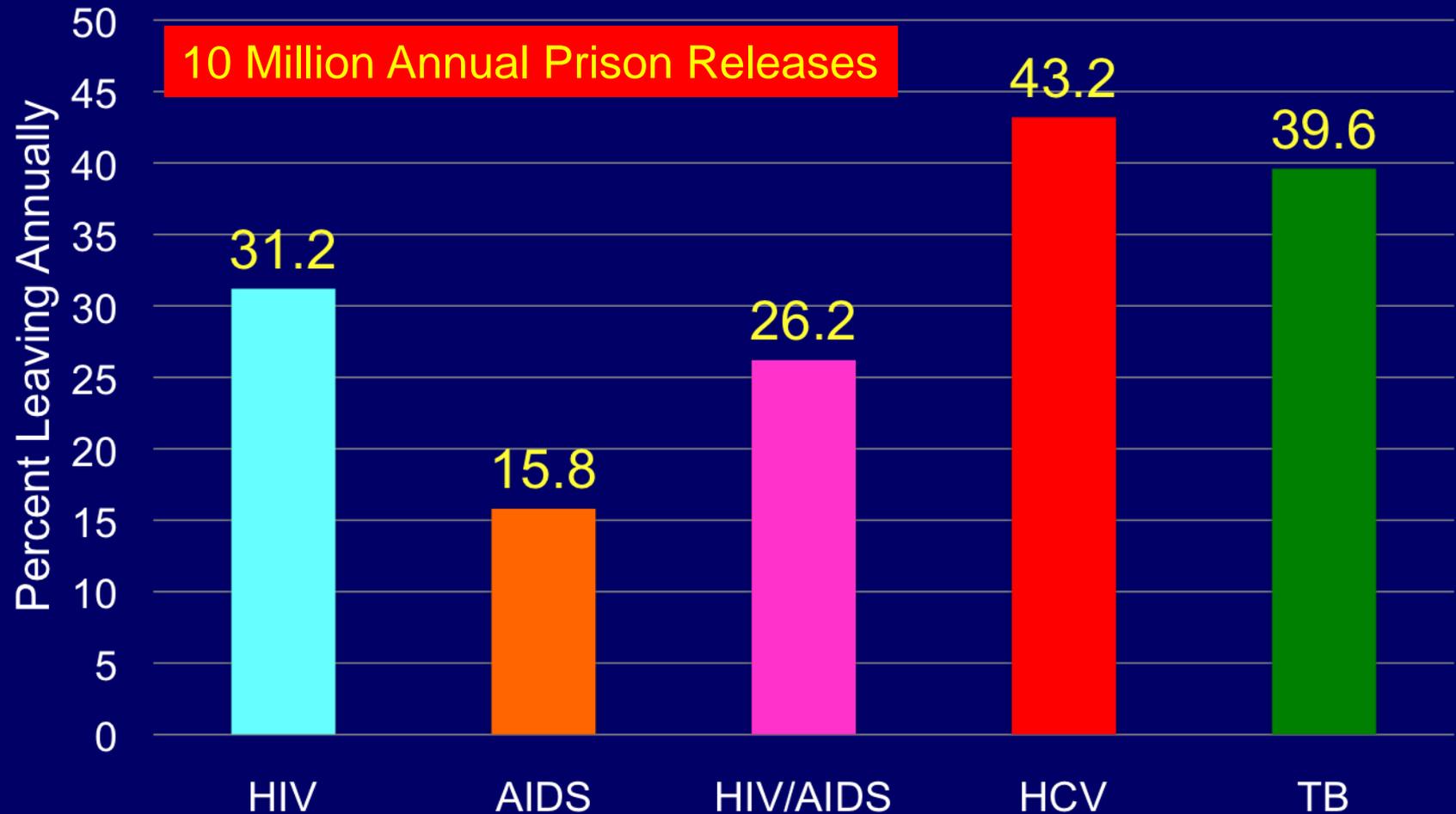
Peters, 1998

Peters, 1998

James, 2006
Baillargeon,
2009

James, 2006

Concentration of Infectious Diseases Among U.S. Prisoners



Hammitt, AJPH, 2002

The Revolving Door...

- 97% of prisoners will eventually be released to the community (10 million/year)
- 25% of HIV+ prisoners released yearly
- Most reenter society after <2 years of incarceration
- 60% reincarcerated



1. The Report of the Re-Entry Policy Council. www.re-entrypolicy.org
2. Beck et al. BJS, US Dept of Justice; 1989, 1999.
3. Bonczar T. BJS, US Dept of Justice; 2003.

What Happens to HIV+ Prisoners During Incarceration and After They Are Released?

HIV/AIDS

MAJOR ARTICLE

Effectiveness of Antiretroviral Therapy among HIV-Infected Prisoners: Reincarceration and the Lack of Sustained Benefit after Release to the Community

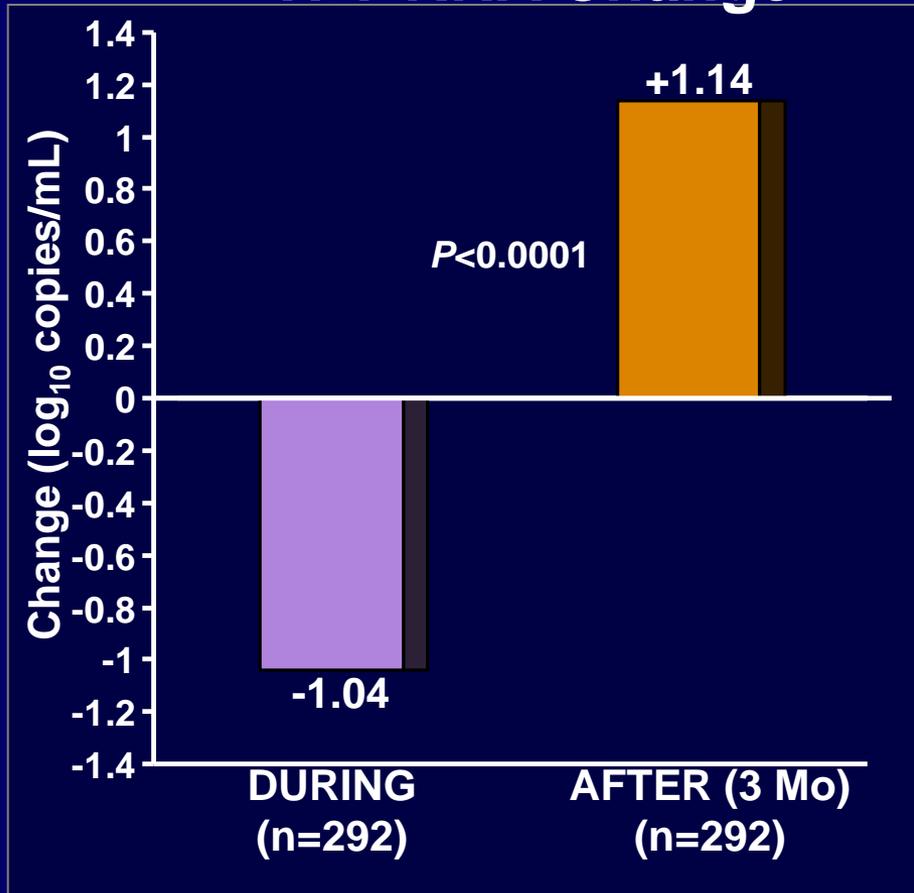
Sandra A. Springer,¹ Edward Pesanti,³ John Hodges,¹ Thomas Macura,^{4*} Gheorghe Doros,² and Frederick L. Altice¹

¹Yale AIDS Program, Yale University School of Medicine, and ²Department of Statistics, Yale University, New Haven, ³Department of Medicine, University of Connecticut Health Center, Farmington, and ⁴ Connecticut Department of Correction, Wethersfield, Connecticut

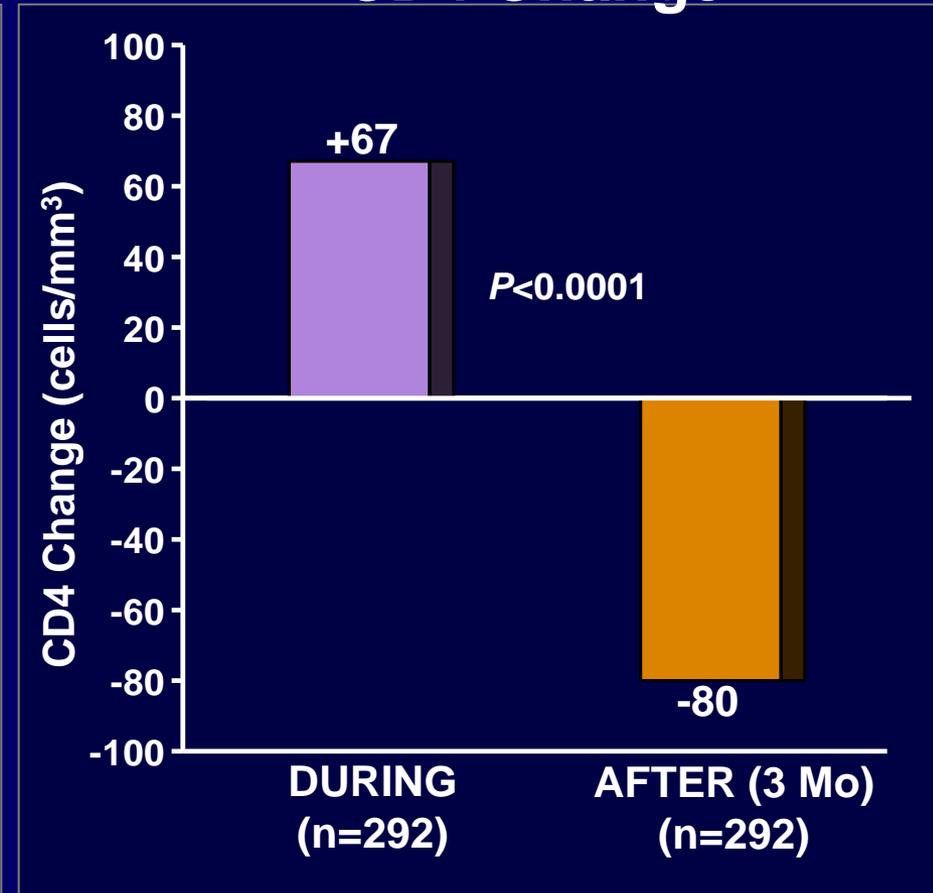
Springer et al., *Clinical Infectious Diseases*, 2004

HIV Treatment Outcomes During and After Incarceration

HIV RNA Change



CD4 Change



The Public Health Impact of Prisoners Who Discontinue ART Upon Release

- After Release, HIV+ prisoners have \uparrow VL^{1,2}
- Increased HIV-1 VL is associated with increased infectiousness^{3,4}
- After release, prisoners return to high risk behaviors (unprotected sex, shared needles) with new and former partners^{5,6,7}
- *Understanding why released HIV+ prisoners have interruptions in their ART is therefore important from a public health perspective...*

1. Springer, CID, 2004

2. Stephenson, Public Health, 2005

3. Anderson, Nature, 1988

4. Hollingsworth, JID, 2008

5. MacGowan, Int J STD AIDS, 2003

6. Morrow, J Corr Health Care, 2007

7. Stephenson. Int J STD AIDS, 2006.

**Pre-Incarceration
“Old Environment”**

**Incarceration
“Artificial Environment”**

**Post-Incarceration
“New Environment”**



Behavioral Interventions

Re-Integration with Family/Supports

Vocational Training/Education

Antiretroviral Therapy

Medical Care

Psychiatric Care

Addressing Treatment Needs

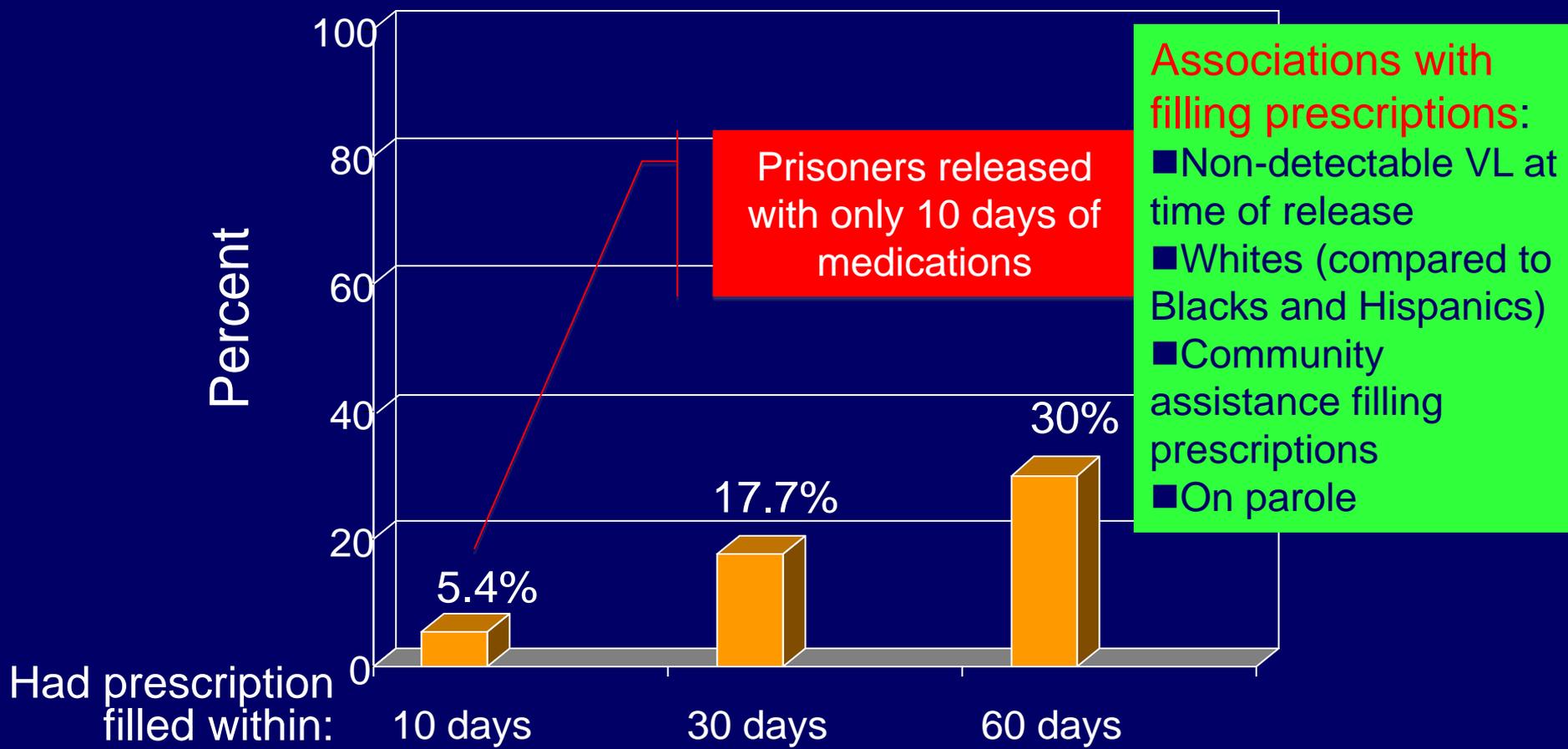
Basic Needs (food, shelter, safety)

...one →

Reasons for Poor Post-Release HIV Treatment Outcomes

- Reasons for **non-persistence** (stops abruptly) or **non-adherence** (adherence tapers off)
 - System problems (entitlements, follow-up)
 - Loss of entitlements
 - Competing post-release priorities
 - Relapse to drug or alcohol use
 - Lack of motivation or behavioral skills
 - Un/undertreated mental illness or substance use

HIV+ Prisoners Do Not Fill Their Prescription After Community-Release



Baillargeon J et al., JAMA 301(8):848-857, 2009.

Community Examples of Evidence-Based Interventions

- Community system integration
- Case Management (not enough!)
- Medication interventions (DAART)
- Effective drug treatment
 - Opiate substitution therapy (MMT, BMT)
 - Alcohol relapse prevention
 - Counseling (CBT, MET, 12 steps)
 - Therapeutic communities

Community Collaborations

A Public Health Model to Connect Correctional Health Care With Communities

*Thomas J. Conklin, MD, CCHP
Thomas Lincoln, MD
Timothy P. Flanigan, MD*

Facilitators and Barriers to Continuing Healthcare After Jail A Community-integrated Program

*Thomas Lincoln, MD; Sofia Kennedy, MPH;
Robert Tuthill, PhD; Cheryl Roberts, MPA;
Thomas J. Conklin, MD; Theodore M. Hammett, PhD*

- Hamden County jail
- Comprehensive health care approach
- Community health centers participate with provision of services
- Replication and evaluation underway

Am J of Public Health 1998. 88; 8: 1249- 1250
J Ambulatory Care Manage 2006. 29; 1: 2-16.

DAART for Released HIV+ Prisoners

Project Connect

- Modeled after DAART efficacy of RCTS for HIV+ drug users in community-based settings ^{1,2}
- DAART is provided once-daily, seven days per week
- All prescriptions, including for other chronic conditions, are provided as DAART (co-morbidity is frequent)
- All subjects receive mobile telephones standard case management services

1. Maru et al. JAIDS 2009; 50; 2:176-81.

2. Maru D et al. AIDS Behav 2008; 12;2; 284-93.

Project CONNECT

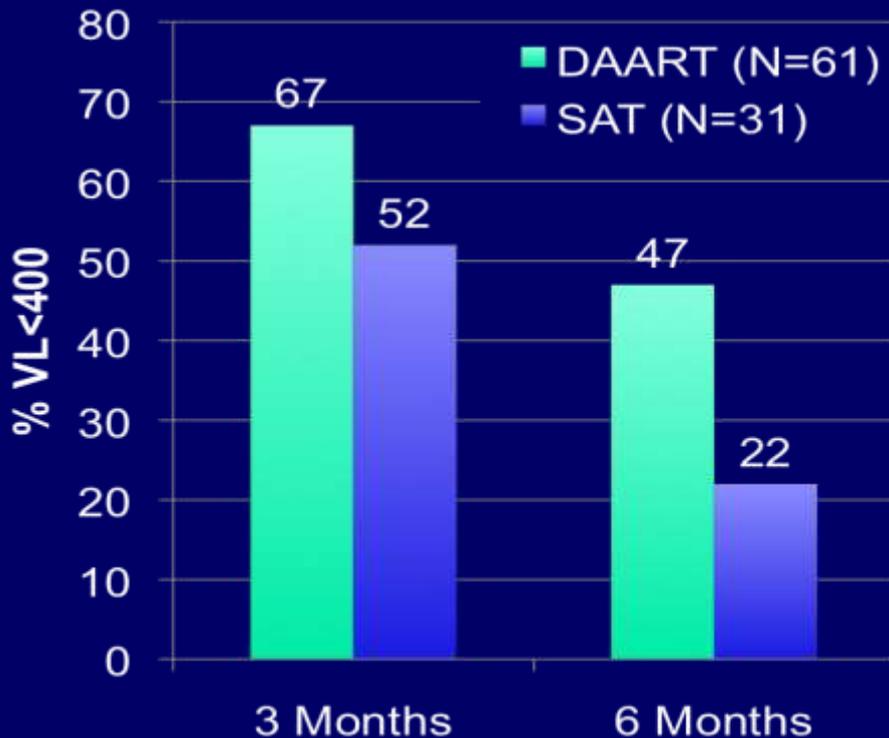
Baseline Characteristics

Characteristic	DAART (N=61)	SAT (N=31)
Mean age (years)	45.1	45.3
Racial/ethnic minority	44 (72)	22 (70)
Women	17 (28)	7 (30)
Opioid Dependence	45 (74)	23 (76)
Cocaine Dependence	34 (56)	16 (52)
Alcohol Dependence	20 (33)	12 (39)
Axis I Disorder	37 (61)	18 (58)
Percent HIV-1 RNA<50	37 (61)	20 (64)
Mean CD4	355	364

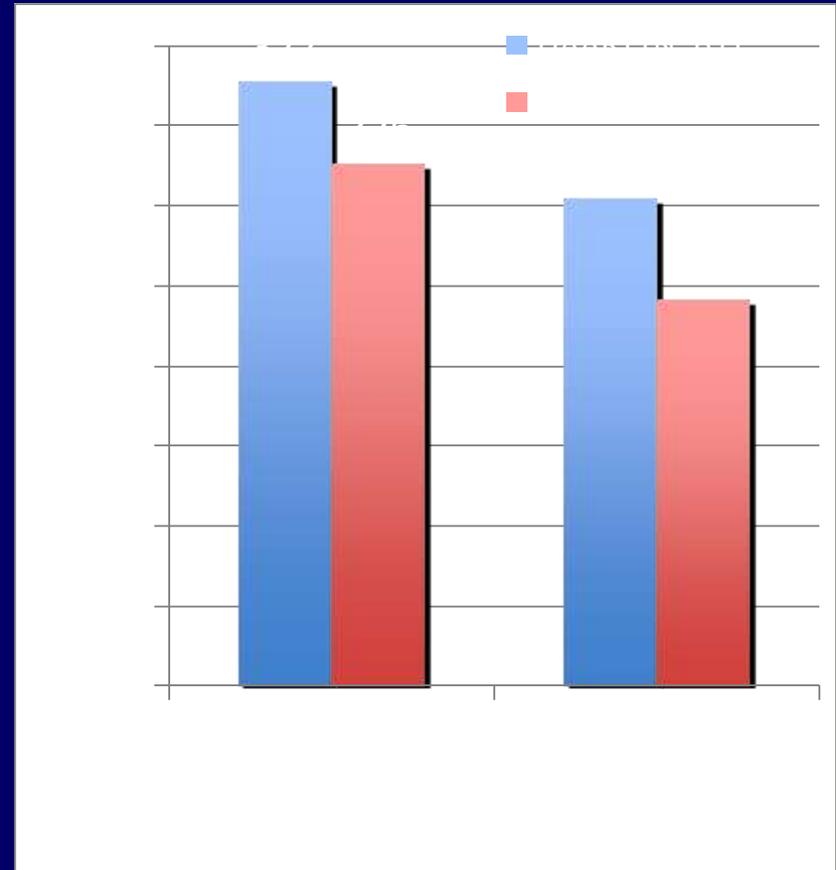
Project CONNECT

HIV Treatment Outcomes

Viral Load



CD4 count



* 101 subjects received 150 cell phones; 50 lost/stolen, 23 damaged and replaced, others were recycled – texting and calling reminders to be assessed

Evidence-Based Pharmacological Treatment for Opioid & Alcohol Dependence

- Opioid Dependence
 - Methadone (pure opioid agonist)
 - Buprenorphine (partial opioid agonist)
 - Naltrexone (pure opioid antagonist)
- Alcohol Dependence
 - Naltrexone (oral, monthly IM injection)
 - Acamprosate (thrice daily)
 - Disulfiram (aversion therapy)

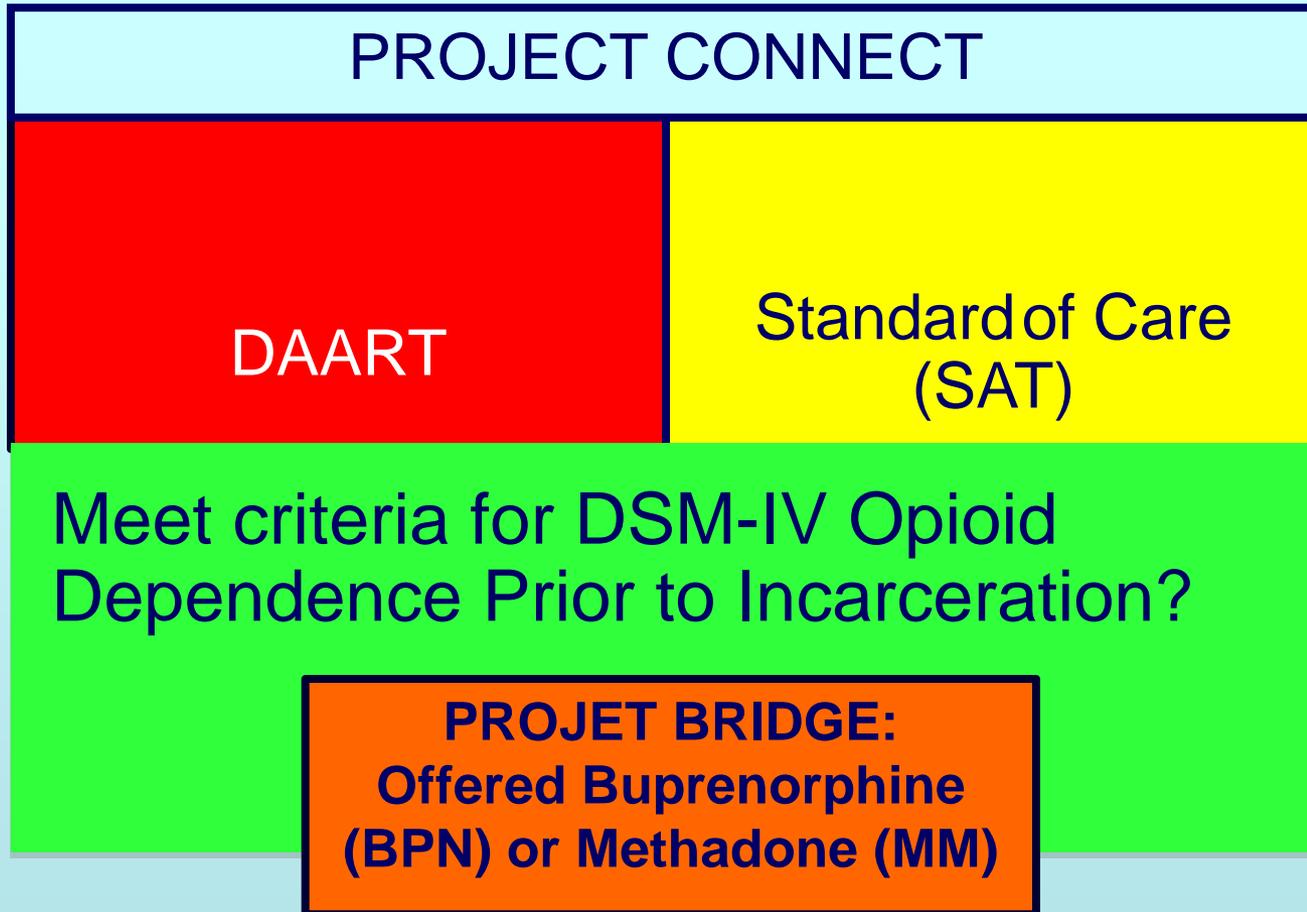
A randomized clinical trial of methadone maintenance for prisoners: Results at 12 months postrelease

Timothy W. Kinlock, (Ph.D.)^{a,b,*}, Michael S. Gordon, (D.P.A.)^a, Robert P. Schwartz, (M.D.)^{a,c},
Terrence T. Fitzgerald, (M.D.)^d, Kevin E. O'Grady, (Ph.D.)^e

Journal of Substance Abuse Treatment 37 (2009) 277–285

12 month Outcomes (N=204 OD Prisoners)	Counseling Only	Counseling + MMT Transfer after release	Counseling + MMT in prison and after release	P value
Retention in Treatment (mean Days)	23.1	91.3	166	<.01
Urine Opioid Drug + (%)	65.5	48.7	25.0	=.008
Criminal Activity	50.8	59.1	52.9	NS

Buprenorphine as a Conduit to Care for Released HIV+ Opioid Dependent Prisoners

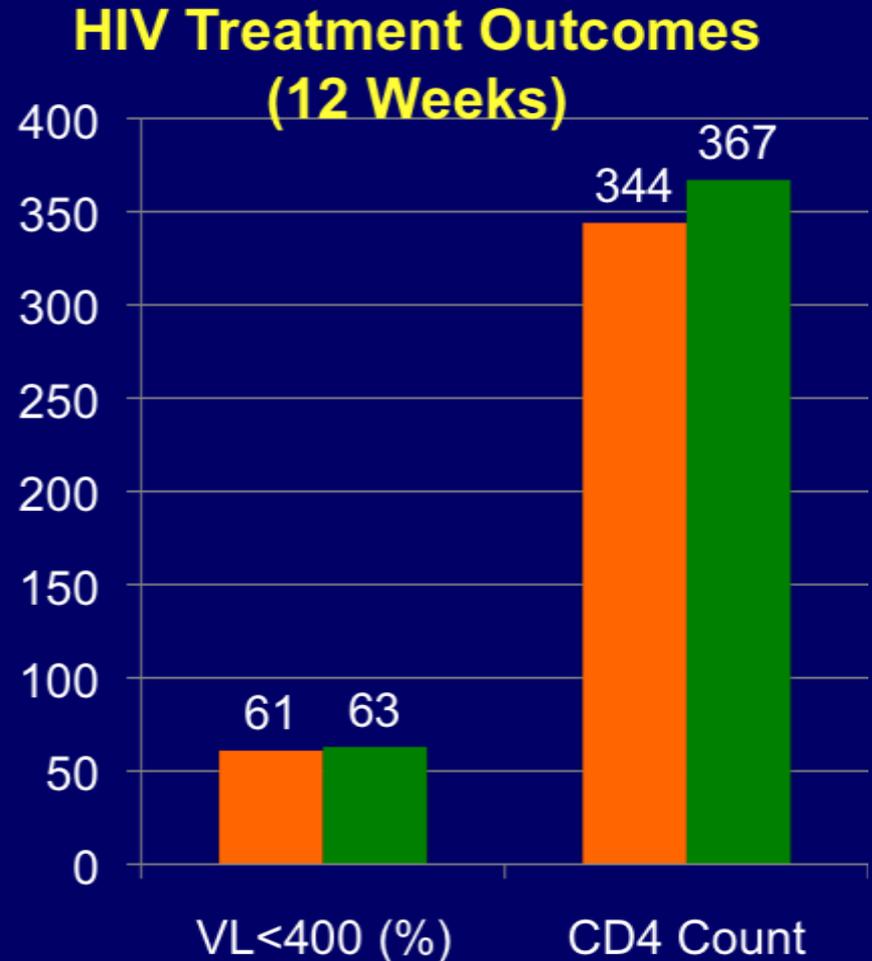


Improved HIV and Substance Abuse Treatment Outcomes for Released HIV-Infected Prisoners: The Impact of Buprenorphine Treatment

- Abstinent from opioids <8 months
- All subjects guaranteed HAART upon release
- 100% had Axis I Disorder (68% mood disorders)
- BPN treatment initiated as close to release as possible
- Nearly 1/3 had relapsed to opioids before being inducted on BPN

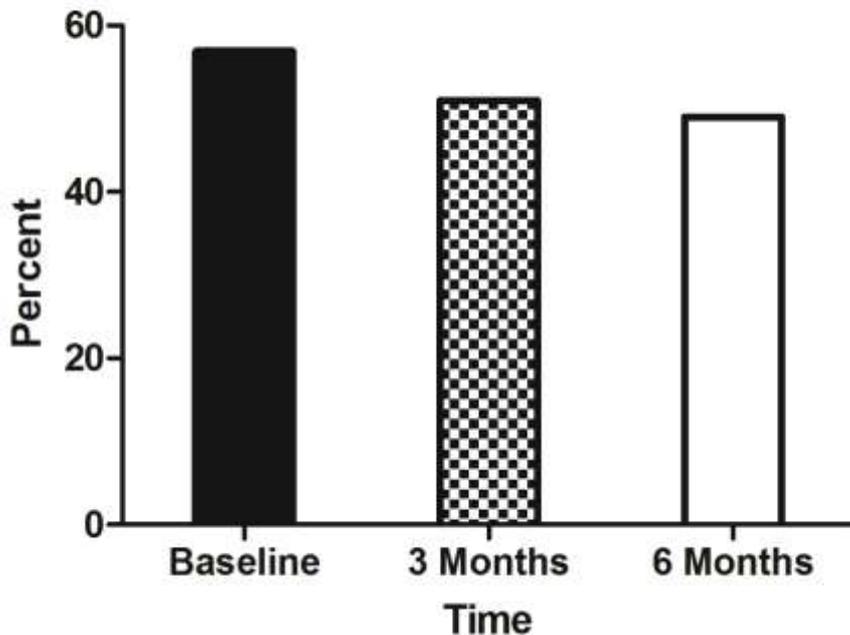
Buprenorphine Treatment for Released HIV+ Prisoners

- Opioid craving ↓ within 3 days
- Low mean BPN stabilization dose (9mg)
- High satisfaction
- 83% Opioid Negative Urine Toxicology
- Retention on BPN 74%

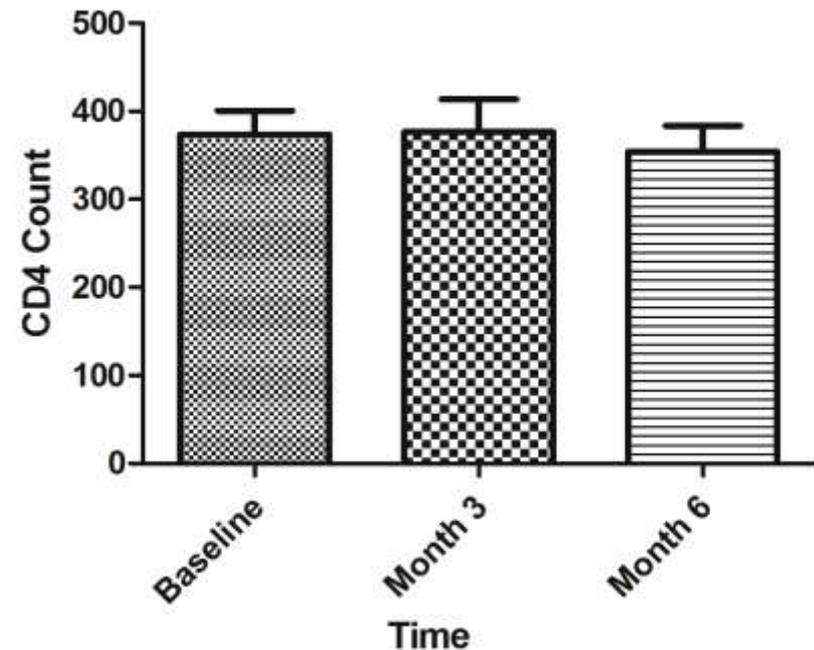


HIV Treatment Outcomes 6 month Project BRIDGE (N=51)

Percent HIV Viral Load < 50



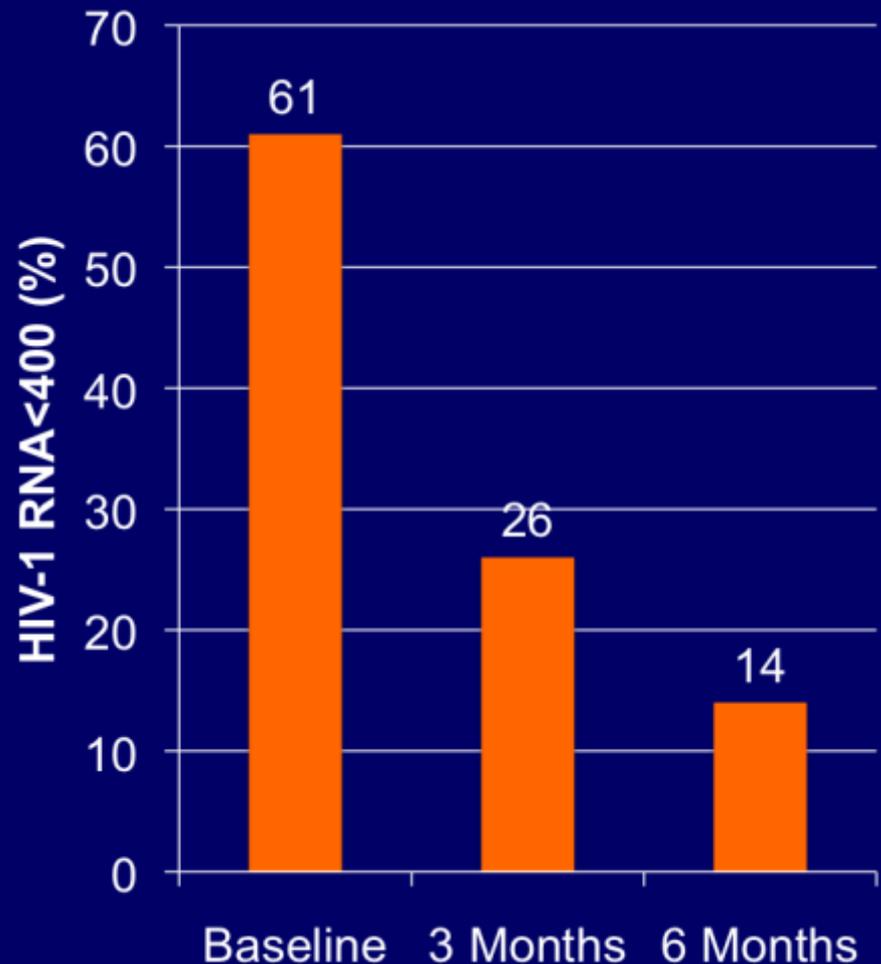
Mean CD4 Count



- Comparison to Opioid Dependent subjects who did not select BPN to be assessed
- Will assess impact of BPN treatment on HIV risk behaviors (2^o prevention)

Impact of Alcohol on HIV Treatment Outcomes

- 40% of Project CONNECT subjects met AUDIT criteria for hazardous drinking (HD)
- HIV outcomes better in HDs who received DAART, but HD overall still had worse HIV outcomes than non-HD subjects



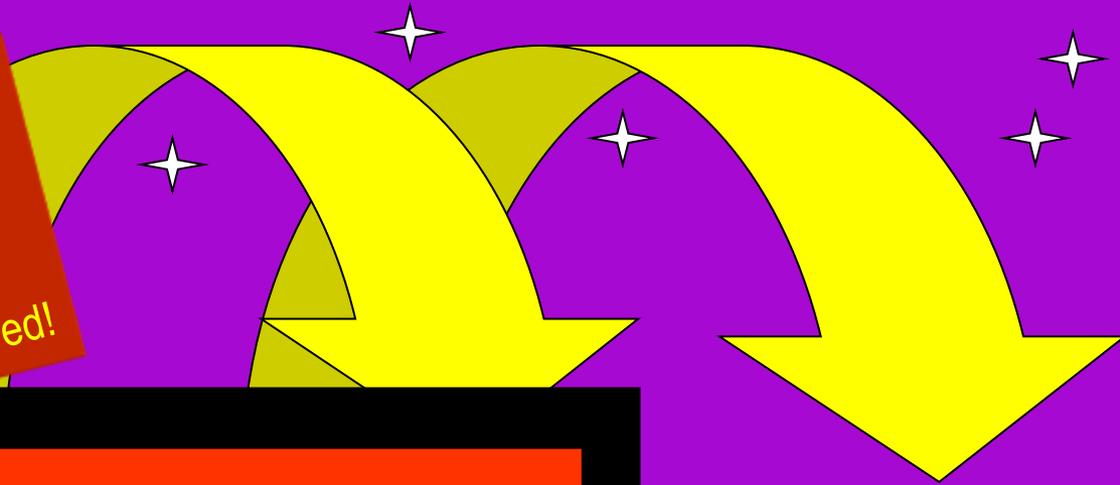
Future Directions...

- Other pharmacotherapies to prevent relapse to opioid and alcohol use
- Cues and Reminders
- Contingency Management (money manager)
- Transitional Adherence Plan

Conclusions

- Correctional systems are an integral part of our public health system
- Prisoners, concentrated with prisoners with HIV, mental illness and substance use disorders, will return to the community
- Released HIV+ prisoners have poor HIV treatment outcomes and are important targets for intervention (system, adherence, adequate treatment of co-morbid conditions)
- Evidence-based community transitional programs are urgently needed for HIV treatment and secondary prevention

McPrison
A Million Sentenced!
A Million Sentences Served!



McPrison

Sentenced

Released

